JOURNAL OF
BIOMEDICAL
MATERIALS
RESEARCH

Volume 60 Contents 2002

April 2002
Volume 60
Issue No. 1

1 Hydroxyapatite Deposition by Electrophoresis on Titanium Sheets with Different Surface Finishing
L. A. de Sena, M. C. de Andrade, A. M. Rossi, and G. de Almeida Soares
Published online 8 January 2002

8 Alteration of Leukocyte Motility on Plasma-Conditioned Prosthetic Biomaterial, ePTFE, via a Flow-Responsive Cell Adhesion Molecule, CD43
R. S. Rosenson-Schloss, C. C. Chang, A. Constantinides, and P. V. Moghe
Published online 8 January 2002

20 Co-extrusion of Biocompatible Polymers for Scaffolds with Co-continuous Morphology
N. R. Washburn, C. G. Simon, Jr., A. Tona, H. M. Elgendy, A. Karim, and E. J. Amis
Published online 8 January 2002

30 Effects of DMAEMA and 4-Methoxyphenol on Gingival Fibroblast Growth, Metabolism, and Response to Interleukin-1
C. A. Lapp and G. S. Schuster
Published online 8 January 2002

36 Control of *In Vivo* Microvessel Ingrowth by Modulation of Biomaterial Local Architecture and Chemistry
J. E. Sanders, A. B. Baker, and S. L. Golledge
Published online 9 January 2002

44 MMA/MPEOMA/VSA Copolymer as a Novel Blood-Compatible Material: Effect of PEO and Negatively Charged Side Chains on Protein Adsorption and Platelet Adhesion
J. H. Lee and S. H. Oh
Published online 9 January 2002

53 Biocompatibility of Fluorinated Polyimide
M. Kanno, H. Kawakami, S. Nagaoka, and S. Kubota
Published online 9 January 2002

61 Recombinant Human Bone Morphogenetic Protein-2 Promotes Osteogenesis Within Atelopeptide Type I Collagen Solution by Combination with Rat Cultured Marrow Cells
M. Ikeuchi, Y. Dohi, K. Horiuchi, H. Ohgushi, T. Noshi, T. Yoshikawa, K. Yamamoto, and M. Sugimura
Published online 9 January 2002

70 Effect of Calcium Phosphate Coating Crystallinity and Implant Surface Roughness on Differentiation of Rat Bone Marrow Cells
P. J. ter Brugge, J. G. C. Wolke, and J. A. Jansen
Published online 11 January 2002

79 Interaction of Bioactive Glasses with Peritoneal Macrophages and Monocytes *In Vitro*
M. Bosetti, L. Hench, and M. Cannas
Published online 11 January 2002

86 Cell Adhesion Peptides Alter Smooth Muscle Cell Adhesion, Proliferation, Migration, and Matrix Protein Synthesis on Modified Surfaces and in Polymer Scaffolds
B. K. Mann and J. L. West
Published online 14 January 2002

94 Heparin and Non-heparin-like Dextrans Differentially Modulate Endothelial Cell Proliferation: *In Vitro* Evaluation with Soluble and Crosslinked Polysaccharide Matrices
D. Letourneur, D. Machy, A. Pellé, E. Marcon-Bachari, G. D'Angelo, M. Vogel, F. Chaubet, and J.-B. Michel
Published online 14 January 2002

101 Influence of Bioresorbable, Unsintered Hydroxyapatite/Poly-L-Lactide Composite Films on Spinal Cord, Nerve Roots, and Epidural Space
M. Matsumoto, E. Chosa, K. Nabeshima, Y. Shikinami, and N. Tajima
Published online 17 January 2002

110 Electrically Communicating Three-Dimensional Cardiac Tissue Mimic Fabricated by Layered Cultured Cardiomyocyte Sheets
T. Shimizu, M. Yamato, T. Akutsu, T. Shibata, Y. Isoi, A. Kikuchi, M. Umezu, and T. Okano
Published online 15 January 2002

118 Transverse Process Fusion with Bovine Anorganic Bone
E. H. Frank, X. Gong, R. V. Sipe, D. C. Buck, and J. O. Hollinger
Published online 15 January 2002

126 Engineering Protein and Cell Adhesivity Using PEO-Terminated Triblock Polymers
V. A. Liu, W. E. Jastromb, and S. N. Bhatia
Published online 23 January 2002

135 Fluorinated Surface-Modifying Macromolecules: Modulating Adhesive Protein and Platelet Interactions on a Polyether-Urethane
A. R. Jahangir, W. G. McClung, R. M. Cornelius, C. B. McCloskey, J. L. Brash, and J. P. Santerre
Published online 17 January 2002

148 Shear Stress and Material Surface Effects on Adherent Human Monocyte Apoptosis
M. S. Shive, W. G. Brodbeck, E. Colton, and J. M. Anderson
Published online 17 January 2002

159 Hydroxyapatite Ceramic Bodies with Tailored Mechanical Properties for Different Applications
L. M. Rodríguez-Lorenzo, M. Vallet-Regí, J. M. F. Ferreira, M. P. Ginebra, C. Aparicio, and J. A. Planell
Published online 17 January 2002

167 Shear Force Modulates Osteoblast Response to Surface Roughness
S. R. Bannister, C. H. Lohmann, Y. Liu, V. L. Sylvia, D. L. Cochran, D. D. Dean, B. D. Boyan, and Z. Schwartz
Published online 23 January 2002

175 Comparative Study of the Formation of Hydroxyapatite in Simulated Body Fluid Under Static and Flowing Systems
P. Siriphannon, Y. Kameshima, A. Yasumori, K. Okada, and S. Hayashi
Published online 23 January 2002

186 Anticoagulant Activity of Sulfonated Polyrotaxanes as Blood-Compatible Materials
H. D. Park, W. K. Lee, T. Ooya, K. D. Park, Y. H. Kim, and N. Yui
Published online 23 January 2002

191 Compliant Design of Artificial Graft: Compliance Determination by New Digital X-ray Imaging System-Based Method
H. Sonoda, S.-I. Urayama, K. Takamizawa, Y. Nakayama, C. Uyama, H. Yasui, and T. Matsuda
Published online 23 January 2002

196 Smooth Muscle Cell Adhesion on Crosslinked Hyaluronan Gels
A. Ramamurthi and I. Vesely
Published online 23 January 2002

206 Prophylactic Treatment of Gram-Positive and Gram-Negative Abdominal Implant Infections Using Locally Delivered Polyclonal Antibodies
K. A. Poelstra, N. A. Barekzi, A. M. Rediske, A. G. Felts, J. B. Slunt, and D. W. Grainger
Published online 23 January 2002

May 2002
Volume 60
Issue No. 2

217 Alginate Type and RGD Density Control Myoblast Phenotype
J. A. Rowley and D. J. Mooney
Published online 24 January 2002

224 Resorbability and Solubility of Zinc-Containing Tricalcium Phosphate
A. Ito, H. Kawamura, S. Miyakawa, P. Layrolle, N. Kanzaki, G. Treboux, K. Onuma, and S. Tsutsumi
Published online 31 January 2002

232 Fabrication of Porous Hydroxyapatite Bodies by a New Direct Consolidation Method: Starch Consolidation
L. M. Rodríguez-Lorenzo, M. Vallet-Regí, and J. M. F. Ferreira
Published online 31 January 2002

241 Bone Formation in Transforming Growth Factor β-1-Coated Porous Poly(propylene fumarate) Scaffolds
J. W. M. Vehof, J. P. Fisher, D. Dean, J.-P. C. M. van der Waerden, P. H. M. Spauwen, A. G. Mikos, and J. A. Jansen
Published online 29 January 2002

252 Chemistry and Biocompatibility of Alginate-PLL Capsules for Immunoprotection of Mammalian Cells
P. de Vos, C. G. Hoogmoed, and H. J. Busscher
Published online 25 January 2002

260 *In Vitro* and *In Vivo* Dissolution Behavior of a Dysprosium Lithium Borate Glass Designed for the Radiation Synovectomy Treatment of Rheumatoid Arthritis
S. D. Conzone, R. F. Brown, D. E. Day, and G. J. Ehrhardt
Published online 28 January 2002

269 Effects of Enamel Matrix Derivative to Titanium Implantation in Rat Femurs
M. Shimizu-Ishiura, S. Tanaka, W.-S. Lee, K. Debari, and T. Sasaki
Published online 28 January 2002

277 Apatite-Forming Ability of a Zirconia/Alumina Nano-Composite Induced by Chemical Treatment
M. Uchida, H.-M. Kim, T. Kokubo, M. Nawa, T. Asano, K. Tanaka, and T. Nakamura
Published online 28 January 2002

283 Hemocompatibility of Materials Used in Microelectromechanical Systems: Platelet Adhesion and Morphology *In Vitro*
B. A. Weisenberg and D. L. Mooradian
Published online 28 January 2002

292 Effects of pH on Human Bone Marrow Stromal Cells *In Vitro*: Implications for Tissue Engineering of Bone
D. H. Kohn, M. Sarmadi, J. I. Helman, and P. H. Krebsbach
Published online 1 February 2002

300 Analysis of Acid-Treated Dentin Smear Debris and Smear Layers Using Confocal Raman Microspectroscopy
Y. Wang and P. Spencer
Published online 29 January 2002

309 Adhesion Between Poly(ethylene-*co*-vinyl alcohol) (EVA) and Titanium
K. Matsumura, S.-H. Hyon, N. Nakajima, C. Peng, H. Iwata, and S. Tsutsumi
Published online 29 January 2002

316 Effect of Sodium Hypochlorite on Dentin Bonding with a Polyalkenoic Acid-Containing Adhesive System
R. Osorio, L. Ceballos, F. Tay, M. A. Cabrerizo-Vilchez, and M. Toledano
Published online 30 January 2002

325 Biomechanical Comparison of the Sandblasted and Acid-Etched and the Machined and Acid-Etched Titanium Surface for Dental Implants
D. Li, S. J. Ferguson, T. Beutler, D. L. Cochran, C. Sittig, H. P. Hirt, and D. Buser
Published online 30 January 2002

333 Surface Characteristics and Structure of Anodic Oxide Films Containing Ca and P on a Titanium Implant Material
X. Zhu, J. L. Ong, S. Kim, and K. Kim
Published online 31 January 2002

June 5, 2002
Volume 60
Issue No. 3

339 Osseointegration of Hydroxyapatite-Coated and Noncoated Ti6A14V Implants in the Presence of Local Infection: A Comparative Histomorphometrical Study in Rabbits
C. J. M. Oosterbos, H. Ch. Vogely, M. W. Nijhof, A. Fleer, A. J. Verbout, A. J. Tonino, and W. J. A. Dhert
Published online 4 February 2002

348 Platelet Adhesion to Polystyrene-Based Surfaces Preadsorbed with Plasmas Selectively Depleted in Fibrinogen, Fibronectin, Vitronectin, or von Willebrand's Factor
W.-B. Tsai, J. M. Grunkemeier, C. D. McFarland, and T. A. Horbett
Published online 6 February 2002

360 *In Vitro* Behavior of Albumin-Loaded Carbonate Hydroxyapatite Gel
J. E. Barralet, S. Aldred, A. J. Wright, and A. G. A. Coombes
Published online 15 February 2002

368 Effect of Elastin on the Calcification Rate of Collagen-Elastin Matrix Systems
A. Singla and C. H. Lee
Published online 6 February 2002

375 Heparin-like Polymers Modulate Proinflammatory Cytokine Production by Lipopolysaccharide-Stimulated Human Monocytes
S. Anastase-Ravion, M.-P. Carreno, C. Blondin, O. Ravion, J. Champion, F. Chaubet, N. Haeffner-Cavaillon, and D. Letourneur
Published online 13 February 2002

384 Synergistic Effects of Glucose and Ultraviolet Irradiation on the Physical Properties of Collagen
M. P. Ohan, K. S. Weadock, and M. G. Dunn
Published online 20 February 2002

392 TGF-β, BMPs, and Their Signal Transducing Mediators, Smads, in Rat Fracture Healing
Y. Yu, J.-L. Yang, P. J. Chapman-Sheath, and W. R. Walsh
Published online 14 February 2002

398 Surface Modification of Poly (D,L-Lactic Acid) with Chitosan and Its Effects on the Culture of Osteoblats *in Vitro*
K. Cai, K. Yao, Y. Cui, S. Lin, Z. Yang, X. Li, H. Xie, T. Qing, and J. Luo
Published online 15 February 2002

405 Cationic Lipid-Mediated Transfection of Bovine Aortic Endothelial Cells Inhibits Their Attachment
K. N. Kader, J. M. Sweany, and R. V. Bellamkonda
Published online 20 February 2002

411 Polyethylene Wear Characteristics *In Vivo* and in a Knee Simulator
P. E. Beaulé, P. A. Campbell, P. S. Walker, T. P. Schmalzried, F. J. Dorey, G. W. Blunn, C. J. Bell, L'H. Yahia, and H. C. Amstutz
Published online 21 February 2002

420 Concentration- and Composition-Dependent Effects of Metal Ions on Human MG-63 Osteoblasts
N. J. Hallab, C. Vermes, C. Messina, K. A. Roebuck, T. T. Grant, and J. J. Jacobs
Published online 21 February 2002

434 Use of Ti-Coated Replicas to Investigate the Effects on Fibroblast Shape of Surfaces with Varying Roughness and Constant Chemical Composition
M. Wieland, B. Chehroudi, M. Textor, and D. M. Brunette
Published online 21 February 2002

445 Transforming Growth Factor-β 1, 2, and 3 Can Inhibit Epithelial Tissue Outgrowth on Smooth and Microgrooved Substrates
X. F. Walboomers, B. A. Dalton, M. D. Evans, J. G. Steele, and J. A. Jansen
Published online 22 February 2002

452 Enzymatic Responses of Human Deciduous Pulpal Fibroblasts to Dental Restorative Materials
C.-C. Chen, R. C.-S. Chen, and S.-T. Huang
Published online 22 February 2002

458 Effect of Chemical Composition on the Corrosion Behavior of Ni-Cr-Mo Dental Casting Alloys
H.-H. Huang
Published online 22 February 2002

466 Novel Osteoblast-Adhesive Peptides for Dental/Orthopedic Biomaterials
M. Dettin, M. T. Conconi, R. Gambaretto, A. Pasquato, M. Folin, C. Di Bello, and P. P. Parnigotto
Published online 22 February 2002

472 *In Vitro* Generation of Differentiated Cardiac Myofibers on Micropatterned Laminin Surfaces
T. C. McDevitt, J. C. Angello, M. L. Whitney, H. Reinecke, S. D. Hauschka, C. E. Murray, and P. S. Stayton
Published online 13 February 2002

480 Uptake of Poly(D,L-lactic-co-glycolic Acid) Microspheres by Antigen-Presenting Cells *In Vivo*
K. D. Newman, P. Elamanchili, G. S. Kwon, and J. Samuel
Published online 26 February 2002

487 Protein and Surface Effects on Monocyte and Macrophage Adhesion, Maturation, and Survival
T. O. Collier and J. M. Anderson
Published online 26 February 2002

497 Heparin-Like Polymer Improved Healing of Gastric and Colic Ulceration
A. Meddahi, C. Alexakis, D. Papy, J.-P. Caruelle, and D. Barritault
Published online 26 February 2002

502 Biocompatibility Evaluation of ePTFE Membrane Modified with PEG in Atmospheric Pressure Glow Discharge
Q. Zhang, C. Wang, Y. Babukutty, T. Ohyama, M. Kogoma, and M. Kodama
Published online 26 February 2002

June 15, 2002
Volume 60
Issue No. 4

511 Evaluation of Nanostructured Carbonated Hydroxyapatite Coatings Formed by a Hybrid Process of Plasma Spraying and Hydrothermal Synthesis
Y. Han, K. Xu, G. Montay, T. Fu, and J. Lu
Published online 28 February 2002

517 Morphologic and Functional Evaluation of Peripheral Nerve Fibers Regenerated Through Polyimide Sieve Electrodes Over Long-term Implantation
D. Ceballos, A. Valero-Cabré, E. Valderrama, M. Schüttler, T. Stieglitz, and X. Navarro
Published online 6 March 2002

529 Effect of Grooved Titanium Substratum on Human Osteoblastic Cell Growth
K. Anselme, M. Bigerelle, B. Noël, A. Iost, and P. Hardouin
Published online 6 March 2002

541 Increase in Gap-Junctional Intercellular Communications (GJIC) of Normal Human Dermal Fibroblasts (NHDF) on Surfaces Coated with High-Molecular-Weight Hyaluronic Acid (HMW HA)
J. U. Park and T. Tsuchiya
Published online 7 March 2002

548 Biocompatibility Assessment of Silicone Oil and Perfluorocarbon Liquids Used in Retinal Reattachment Surgery in Rat Retinal Cultures
F. Malchiodi-Albedi, A. Morgillo, G. Formisano, S. Paradisi, R. Perilli, G. C. Scalzo, G. Scorcia, and S. Caiazza
Published online 11 March 2002

556 Mechanical Properties and Osteoconductivity of New Bioactive Composites Consisting of Partially Crystallized Glass Beads and Poly(methyl methacrylate)
S. Shinzato, T. Nakamura, K. Ando, T. Kokubo, and Y. Kitamura
Published online 11 March 2002

564 Theoretical Analysis of Adsorption Thermodynamics for Hydrophobic Peptide Residues on SAM Surfaces of Varying Functionality
R. A. Latour, Jr. and C. J. Rini
Published online 13 March 2002

578 Manipulation of Bacterial Adhesion and Proliferation by Surface Charges of Electrically Polarized Hydroxyapatite
M. Ueshima, S. Tanaka, S. Nakamura, and K. Yamashita
Published online 13 March 2002

585 Composites Consisting of Poly(methyl methacrylate) and Alumina Powder: An Evaluation of Their Mechanical and Biological Properties
S. Shinzato, T. Nakamura, T. Kokubo, and Y. Kitamura
Published online 3 April 2002

592 Biodegradable Polyurethanes for Implants. II. *In Vitro* Degradation and Calcification of Materials from Poly(ε-caprolactone)–poly(ethylene oxide) Diols and Various Chain Extenders
K. Gorna and S. Gogolewski
Published online 13 March 2002

607 Fibrin as an Alternative Biopolymer to Type-I Collagen for the Fabrication of a Media Equivalent
E. D. Grassl, T. R. Oegema, and R. T. Tranquillo
Published online 18 March 2002

613 Electrospun Nanofibrous Structure: A Novel Scaffold for Tissue Engineering
W.-J. Li, C. T. Laurencin, E. J. Caterson, R. S. Tuan, and F. K. Ko
Published online 25 March 2002

622 Adsorption of Proteins from Infant and Adult Plasma to Biomaterial Surfaces
R. M. Cornelius, J. G. Archambault, L. Berry, A. K. C. Chan, and J. L. Brash
Published online 25 March 2002

633 *In Vitro* Characterization and *In Vivo* Properties of a Carbonated Apatite Bone Cement
I. Khairoun, D. Magne, O. Gauthier, J. M. Bouler, E. Aguado, G. Daculsi, and P. Weiss
Published online 25 March 2002

643 The Porosity Dependence of the Dielectric Constant for Sintered Hydroxyapatite
T. P. Hoepfner and E. D. Case
Published online 25 March 2002

651 Biodegradation of Carbonate Apatite/Collagen Composite Membrane and Its Controlled Release of Carbonate Apatite
T. Matsumoto, M. Okazaki, M. Inoue, S. Ode, C. Chang-Chien, H. Nakao, Y. Hamada, and J. Takahashi
Published online 27 March 2002

657 Viability, Adhesion, and Bone Phenotype of Osteoblast-like Cells on Polyelectrolyte Multilayer Films
P. Tryoen-Tóth, D. Vautier, Y. Haikel, J.-C. Voegel, P. Schaaf, J. Chluba, and J. Ogier
Published online 29 March 2002

668 Engineering Vascular Networks in Porous Polymer Matrices
M. C. Peters, P. J. Polverini, and D. J. Mooney
Published online 29 March 2002

679 Stress Influence on Interface in Plasma-Sprayed Hydroxyapatite Coatings on Titanium Alloy
P. Millet, E. Girardin, C. Braham, and A. Lodini
Published online 29 March 2002

686 Author Index to Volume 60

692 Subject Index to Volume 60